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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,932	04/07/2006	Takeshi Sasaki	Q94334	5432

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2100 PENNSYLVANIA AVE. NW
WASHINGTON, DC 20037-3213

EXAMINER	
KALAFUT, STEPHEN J	

ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
03/17/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,932	SASAKI, TAKESHI	
	Examiner	Art Unit	
	Stephen J. Kalafut	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07 Apr 2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3 and 5-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takeuchi *et al.* (JP 2001-216965), cited by applicants.

Takeuchi *et al.* disclose a battery with a non-aqueous electrolyte (section 0030) and a cathode active material of the formula $LiNi_xCo_yAl_zO_2$, where $x+y+x=1$, $0.05 \leq y \leq 0.4$, and $0.01 \leq z \leq 0.09$ (section 0015). This would correspond to the present coefficient "a" equaling 1.0 and "b" equaling zero. The other coefficients disclosed by Takeuchi *et al.* would either fall within the present ranges for the amounts of Ni, Co and Al, or overlap them. Thus, the present material would be either anticipated by Takeuchi *et al.*, or at best represent an obvious optimization thereover. Any recited properties, such as oxygen binding energy or concentration ratios, would inherently accrue. Takeuchi *et al.* also disclose a minimum mean particle diameter of 4 microns (section 0021) and a specific surface area of 0.1 to 1 m^2/g (section 0022), with a

specific example of 0.3 m^2/g (section 0034), which would fall within or overlap the present ranges. Regarding claim 2, recitations of how the material was produced are treated under product-by-process practice, and not given patentable weight in a product claim until shown that the process steps necessarily confer onto the product a characteristic not also true of the prior art. See MPEP 2113 and the cases cited therein. For the above reasons, these claims would be either fully met by or at best obvious over Takeuchi *et al.*

Claims 1-3, 5 and 7-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Yamahira *et al.* (JP 2001-266,876), cited by applicants.

Yamahira *et al.* disclose a nonaqueous electrolyte battery that includes a cathode active material having the formula $Li_xNi_yCo_zAl_{(1-y-z)}O_2$, where $0.05 \leq x \leq 1.0$, $0.7 \leq y \leq 0.9$, $0.05 \leq z \leq 0.18$, and $0.85 \leq y+z \leq 0.98$ (section 0011). Here, "x" would correspond to the present "a", while the present "b" equals zero. The other coefficients disclosed by Yamahira *et al.* would either fall within the present ranges for the amounts of Ni, Co and Al, or overlap them. Thus, the present material would be either anticipated by Yamahira *et al.*, or at best represent an obvious optimization thereover. Any recited properties, such as oxygen binding energy or concentration ratios, would inherently accrue. Yamahira *et al.* disclose a specific surface area of below 0.7 m^2/g (section 0021) and a mean particle diameter of 10 microns or less (section 0015), which would fall within or overlap the present ranges. Regarding claim 2, recitations of how the material was produced are treated under product-by-process practice. See MPEP 2113 and the

cases cited therein. For the above reasons, these claims would be either fully met by or at best obvious over Yamahira *et al.*

Claims 1, 2 and 7-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over either Takeuchi *et al.* (JP 2002-222,648), Watanabe *et al.* (JP 10-321,224), or Nakano *et al.* (JP 2003-17,055), all cited by applicant.

Takeuchi *et al.* disclose a battery with a non-aqueous electrolyte (section 0055) and a cathode active material of the formula $Li_{1+x}Ni_{1-x-y}Co_yAl_zO_2$, where $0 \leq x \leq 0.1$, $0.1 < y < 0.4$ and $0.002 < z < 0.1$ (section 0012). Thus, the quantity (x+1) would correspond to the present coefficient "a", while the present "b" equals zero. The other coefficients disclosed by Takeuchi *et al.* would either fall within the present ranges for the amounts of Ni, Co and Al, or overlap them. Thus, the present material would be either anticipated by Takeuchi *et al.*, or at best represent an obvious optimization thereover. Any recited properties, such as oxygen binding energy or concentration ratios, would inherently accrue. For the above reasons, these claims would be either fully met by or at best obvious over Takeuchi *et al.*

Watanabe *et al.* disclose a battery with a non-aqueous electrolyte (section 0030) and a cathode active material of the formula $Li_wNi_xCo_yAl_zO_2$, where w ranges from 0.90 to 1.10, x ranges from 0.80 to 0.95, y ranges from 0.04 to 0.19, z ranges from 0.01 to 0.16, and $x+y+z=1$ (section 0005). Here, "w" would correspond to the present "a", while the present "b" equals zero. The other coefficients disclosed by Watanabe *et al.* would either fall within the present ranges for the amounts of Ni, Co and Al, or overlap them. Thus, the present material would be either anticipated by Watanabe *et al.*, or at best represent an obvious optimization thereover.

Any recited properties, such as oxygen binding energy or concentration ratios, would inherently accrue. For the above reasons, these claims would be either fully met by or at best obvious over Watanabe *et al.*

Nakano *et al.* disclose battery with a non-aqueous electrolyte (section 0044) and a cathode active material of the formula $LiNi_{1-x-y}Me_xAl_yO_2$, where $0<x\leq 0.3$ and $0<y<0.15$, and Me is Co, Mn, or Fe (section 0017), and is preferably Co (section 0021). This would correspond to the present coefficient "a" equaling 1.0, and "b" equaling zero when Me is Co. The other coefficients disclosed by Nakano *et al.* would either fall within the present ranges for the amounts of Ni, Co and Al, or overlap them. Thus, the present material would be anticipated by Nakano *et al.*, or at best represent an obvious optimization thereover. Any recited properties, such as oxygen binding energy or concentration ratios, would inherently accrue. For the above reasons, these claims would be either fully met by or at best obvious over Nakano *et al.*

Regarding claim 2 with respect to all these references, recitations of how the material was produced are treated under product-by-process practice, and do not confer patentable weight in a product claim. See MPEP 2113 and the cases cited therein.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi *et al.* (JP '965).

This claim differs from Takeuchi *et al.* by reciting an average particle size of 9 to 10 microns. However, since this falls within the size range disclosed by Takeuchi *et al.* of 4 to 50 microns (section 0021), and because particle size would have an effect on surface area and thus

reaction kinetics, determining an optimal particle size would be within the skill of the ordinary artisan. This claim would thus be obvious over Takeuchi *et al.*

Claims 4 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamahira *et al.*

These claims differ from Yamahira *et al.* by reciting an average particle size of 9 to 10 microns and a specific surface area of 0.3 to 0.4 m^2/g. However, since these fall within the ranges disclosed by Yamahira *et al.* of 10 microns or less and 0.7 m^2/g or less, and because particle size and surface area would have an effect on reaction kinetics and adhesion to a binder (section 0105), determining optimal particle size and surfaces area would be within the skill of the ordinary artisan. This claim would thus be obvious over Yamahira *et al.*

Claims 3-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over either Takeuchi *et al.* '648, Watanabe *et al.* or Nakano *et al.*

These claims differ from Takeuchi *et al.* '648, Watanabe *et al.* and Nakano *et al.* by reciting average particle size and specific surface area for the cathode material. However, since particle size and surface area would have an effect on reaction kinetics and adhesion to a binder, determining optimal particle size and surfaces area would be within the skill of the ordinary artisan. These claims would thus be obvious over any one of Takeuchi *et al.* '648, Watanabe *et al.* and Nakano *et al.*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Aoshima *et al.* (US 2004/0076883) is the equivalent of JP 2003-7,345, cited by applicant. Although this document and JP 2002-313420 are both cited as "Y" on the International Search Report, they deal with materials that are similar to, but distinct from the present cathode materials. JP 2004-327,246 is cited as both "X" and "E", and is thus published too recently to be applicable as prior art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen J. Kalafut/
Primary Examiner, Art Unit 1795